

**Calibration method for carrying out multiport measurements on semiconductor wafers**

**Abstract**

The invention relates to a method for calibrating a vectorial network analyser having n measurement ports and at least  $2n$  measurement locations ( $n > 1$ ) by successive measurement of the reflection and transmission parameters at different two-port calibration standards, which are connected between the measurement ports in any desired order and must all have a transmission path, and three different n-port calibration standards, which are connected between the measurement ports in any desired order and which are not permitted to show transmission and by calculation of error coefficient and scattering matrix  $[S_x]$  with the 10-term or 7-term multiport method. An object of the invention is to propagate a method for calibrating these vectorial network analyser used for multiport measurement which permits a calibration with increased precision and considerable reproducibility of measurement. This problem is solved by the measurements of a thru standard, which is contacted between each possible measurement port combination, of n known, if appropriate different impedance standards and two unknown, there selves calibrated reflection standards at a n-one-port. (Figure 2)

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